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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,007	02/07/2002	John B. Terry	0960-022	8832

7590 01/12/2007  
JOHN L. DOUGHTY  
ARRIS INTERNATIONAL, INC.  
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EXAMINER
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SHANG, ANNAN Q

ART UNIT	PAPER NUMBER
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2623

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p align="center">10/071,007</p>	<p><b>Applicant(s)</b></p> <p align="center">TERRY ET AL.</p>	
	<p><b>Examiner</b></p> <p align="center">Annan Q. Shang</p>	<p><b>Art Unit</b></p> <p align="center">2623</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
:8/8/03;8/11/03;7/22/02;3/26/02;.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-25 are rejected under 35 U.S.C. 102(e) as being anticipated by **Kitamura et al (6,188,871)**.

As to claim 1, note the **Kitamura** reference figures 2-5 and 11-14, discloses regional common-use block of CATV system and CATV system using the regional common-use blocks and further discloses a tree and branch distribution network for conveying data communications and television signals; the network comprising:

A feeder cable for carrying television signals and data communications from an upstream end (figs.2-5 and 11-14, CATV Center 101) to a downstream end (Subscriber 117), the downstream end connected to a first local distribution network (104/117) and to a second local distribution network (104/117); the feeder cable having the capacity to carry communications in a band of frequencies above the band of frequencies that can be used reliably in the first and second local distribution networks (figs.2-5, col.6, line 56-col.7, line 15 and line 63-col.8, line 18);

The first local distribution network isolated from the second local distribution network so that a downstream communication delivered to the first local distribution network on a first downstream frequency would not be readable on the first downstream frequency by a client modem connected to the second local distribution network; within each of the first and second local distribution networks, a set of client modems for receiving data at the distal ends of the two local distribution networks, the client modems adapted for communication to a device connected downstream of the client modem (figs.3, col.6, line 56-col.7, line 15, line 63-col.8, line 18 and col.10, line 24-col.11, line 17);

A connection to a source of data communications to be conveyed over the feeder cable to the set of client modems (see fig.3) at the distal end of the local communication networks; Data communications at a first feeder cable frequency carried downstream over the feeder cable, the data communications received from the source of data communications for transmission to one of the set of client modems at the distal end of the first local distribution network (col.6, line 56-col.7, line 15, line 63-col.8, line 18 and col.10, line 24-col.11, line 17);

Data communications at a second feeder cable frequency carried downstream over the feeder cable, the data communications received from the source of data communications for transmission to one of the set of client modems at the distal end of the second local distribution network; the second feeder cable frequency suitable for the feeder cable and above the band of frequencies that can be used reliably in the local

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distribution networks; the second feeder cable frequency different from the first feeder cable frequency (col.3, lines 39-67, col.7, lines 12-63 and col.8, line 13-46);

A downstream frequency shifter (CPU109/SW110) in data communication with the downstream end of the feeder cable and the second local distribution network to shift the data communications on the second feeder cable frequency to a downstream data frequency for the second local distribution network, the output of the downstream frequency shifter provided to the second local distribution network and conveyed to the set of client modems at the distal end of the second local communication network (col.6, line 56-col.7, line 27, line 50-col.8, line 18, col.10, line 24-col.11, line 1+ and col.13, line 56-col.14, line 28).

As to claim 2, Kitamura further discloses where the first feeder cable frequency equals a downstream data frequency for the first local distribution network (col.10, line 24-49).

As to claim 3, Kitamura further discloses where the downstream frequency shifter comprises an oscillator, a synthesizer and a mixer (col.7, line 63-col.8, line 18).

As to claim 4, Kitamura further discloses where the first local distribution network is isolated from the second local distribution network through use of directional taps positioned between the first and second local distribution networks and the feeder cable (fig.3, col.6, line 56-col.7, line 27 and line 50-col.8, line 1+).

As to claim 5, Kitamura further discloses an upstream frequency shifter in data communication with the downstream end of the feeder cable and the second local distribution network to shift upstream communications from an upstream data frequency

for the second local distribution network to a third feeder cable frequency; the third feeder cable frequency suitable for the feeder cable and above the band of frequencies that can be used reliably in the local distribution networks; the third feeder cable frequency different from the first feeder cable frequency and the second feeder cable frequency; the output from the upstream frequency shifter communicated to the feeder cable (col.7, line 50-col.8, line 18 and col.10, line 21-60).

As to claim 6, **Kitamura** further discloses a multi-band extender for use in increasing the capacity of a tree and branch distribution network; the multi-band extender comprising:

A first splitter device (105) connected to communicate with a feeder cable; the splitter device connected to the feeder cable through a connection that discriminates against frequencies in a first frequency band used by the feeder cable to carry television signals; a downstream path exiting from the first splitter device and in data communication with a second splitter device (110); an output of the second splitter device in data communication with a first filter to allow downstream travel of communications on a first frequency; a first directional tap (113) with a first port connected to a second port and to a third port, the first filter connected to the third port on the first directional tap (fig.3, col.7, line 5-col.8, line 18 and col.10, lines 21-60);

The first port on the first directional tap connected to a high frequency port on a first diplexer (114); the first diplexer having a low frequency port in data communication with a source of television signals on the first frequency band below the first frequency; a downstream leg of the first diplexer connected to a first local distribution network that

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is connected to at least one television and at least one client modem (LAN SH-117M, col.7, line 5-col.8, line 18 and col.10, lines 21-60);

A second output of the second splitter device in data communication with a second filter to allow downstream travel of communications on a second frequency and to discriminate against communications on the first frequency; the second filter connected to a downstream frequency shifter to shift the data communications on the second frequency to a second local distribution network downstream frequency;

A second directional tap with a first port connected to a second port and to a third port, the second port isolated from the third port; an output of the downstream frequency shifter (CPU-109) in data communication with the third port on the second directional tap; the first port on the second directional tap connected to a high frequency port on a second diplexer (of LAN SH-117M); the second diplexer having a low frequency port in data communications with the source of television signals on the frequency band below the first frequency (col.7, line 5-col.8, line 18 and col.10, lines 21-60 and col.13, lines 59-col.14, line 28);

The downstream leg of the second diplexer connected to a second local distribution network that is connected to at least one television and at least one client modem (LAN SH-117M, col.7, line 5-col.8, line 18 and col.10, lines 21-60 and col.13, lines 59-col.14, line 28)

As to claims 7-8, Kitamura further discloses where the second local distribution network contains at least one component rated for use in a frequency band range and



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the second frequency is outside the frequency band range and where the second frequency is above 1.0 GHz. (col.7, lines 5-27, line 50-62).

As to claims 9-11, Kitamura further discloses where the second port on the first directional tap and the second port on the second directional tap are both in data communication with a combiner device; an upstream output of the combiner device connected to the first splitter device whereby: upstream communications from the first local distribution network may travel upstream from the first local distribution network, through the first directional tap exiting out the second port, before passing through the combiner device, before passing upstream through the first splitter device before reaching the feeder cable; upstream communications from the second local distribution network may travel upstream from the second local distribution network through the second directional tap exiting the second port, before passing through the combiner device, before passing upstream through the first splitter device before reaching the feeder cable; and the feeder cable carries (figs.2-5, 11-14, col.6, line 56-col.7, line 27, line 50-col.8, line 18, col.10, line 24-col.11, line 1+ and col.13, line 56-col.14, line 28): television signals in the first frequency band; downstream communications on the first frequency for use in the first local distribution network; downstream communications on the second frequency (different from the first frequency) for use in the second local distribution network; upstream communications from the first local distribution network; and upstream communications from the second local distribution network; where a frequency used on the feeder cable to carry the upstream communications from the first local distribution network equals a frequency used for upstream communication in the

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first local distribution network which equals a frequency used on the feeder cable to carry the upstream communications from the second local distribution network which equals a frequency used for upstream communication in the second local distribution network; where the second port on the first directional tap is in data communication with a third filter set to pass an upstream frequency of the first local distribution network (figs.2-5, 11-14, col.6, line 56-col.7, line 27, line 50-col.8, line 18, col.10, line 24-col.11, line 1+ and col.13, line 56-col.14, line 28); an upstream output of the third filter is in data communication with a combiner device; an upstream output of the combiner device is in data communication with the first splitter device; and the second port on the second directional tap is in data communication with a fourth filter set to pass an upstream frequency used by the second local distribution network; an upstream output of the fourth filter is in data communication with an upstream frequency shifter that shifts the data communications on the upstream frequency used by the second local distribution network to a second upstream feeder cable frequency; an output of the upstream frequency shifter is in data communication with a fifth filter set to pass the second upstream feeder cable frequency; an upstream output of the fifth filter is in data communication with the combiner device (figs.2-5, 11-14, col.6, line 56-col.7, line 27, line 50-col.8, line 18, col.10, line 24-col.11, line 1+ and col.13, line 56-col.14, line 28); where upstream communications from the first local distribution network may travel upstream from the first local distribution network through the first directional tap exiting the second port before passing through the third filter, before passing through the combiner device, before passing upstream through the first splitter device before

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reaching the feeder cable; upstream communications from the second local distribution network may travel upstream from the second local distribution network through the second directional tap exiting the second port before passing through the fourth filter before passing through the upstream frequency shifter before passing through the fifth filter before passing through the combiner device before reaching the feeder cable; and the feeder cable carries television signals in the first frequency band; downstream communications on the first frequency for use in the first local distribution network; downstream communications on the second frequency (different from the first frequency) for use in the second local distribution network; upstream communications from the first local distribution network; and upstream communications from the second local distribution network on the second upstream feeder cable frequency (figs.2-5, 11-14, col.6, line 56-col.7, line 27, line 50-col.8, line 18, col.10, line 24-col.11, line 1+ and col.13, line 56-col.14, line 28).

Claim 12 is met as previously discussed with respect to claims 7-8.

Claims 13-15 are met as previously discussed with respect to claims 2-5.

As to claims 16, the claimed "a network containing a multi-band extender for use in increasing the capacity of a feeder cable in a tree..." is are composed of the same structural elements that were discussed with respect to the rejection of claims 1-6 and 9-11; the claimed upstream amplifier is inherent to 104.

Claims 18-19 are met as previously discussed with respect to claims 1-5.

As to claim 21, the claimed "A method of increasing the is met as previously discussed with respect to claims 1-5.

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As to claims 22-25, Kitamura further discloses where the second downstream frequency is in the range of 5hz to 42 MHz, where the second downstream frequency is in the range of 750-860 MHz, where the second downstream frequency is in the first frequency band and is in the second frequency band (col.7, lines 5-27, line 50-62)

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Basawapatna et al (6,745,392) disclose enhanced security communication system.

Jenkins et al (6,463,588) disclose method and apparatus for restoring port status in a cable TV tap.

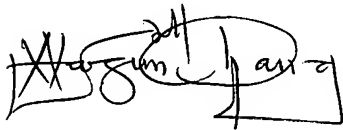
Gnauck et al (5,959,658) disclose network apparatus and method to provide compressed digital video over mini-fiber nodes.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the **Electronic Business Center (EBC)** at 866-217-9197 (toll-free). If you would like assistance from a **USPTO Customer Service Representative** or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Annan Q. Shang', written over a rectangular box.

**Annan Q. Shang**